

A hand is shown pointing at a glowing digital node. A network diagram with various nodes and connecting lines is overlaid on the scene. The background is a blurred image of a person's arm and hand.

Wireless & Self-Powered IoT

The Key to Intelligent Systems and Smart Buildings

June 2019

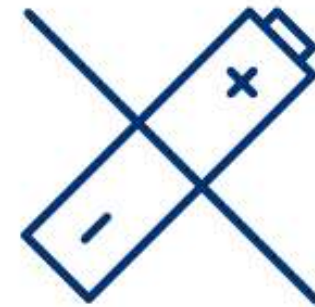
EnOcean enables intelligent IoT systems by providing necessary sensor data at low cost and zero maintenance



There is no intelligent system without sensors providing information.



There are no sensors providing information if they're not available at reasonable cost.



There is no information from sensors if they are not durable and zero maintenance .

The Markets We Address

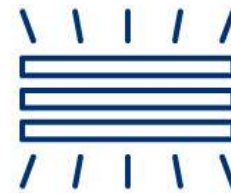
We produce and market self-powered wireless sensor solutions for IoT systems used in...



Building Automation



Smart Homes



LED Lighting



M2M

Transportation
Agriculture

Worldwide,
buildings consume

42%

of all electricity,
up to

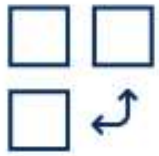
50 %

of which is wasted.

Source: IBM Research, 2016

The Value We Create

We help to **preserve natural resources** and **improve quality of life** by creating wireless, self-powered IoT sensor systems providing..



Flexibility



Energy-efficiency



Time savings



Cost savings

For building owners, **operations** represent

42%

of the **total cost** of a building over its lifespan.

Source: IBM Research, 2016

Making Buildings Intelligent for 15 Years

EnOcean
Self-powered IoT

Take the largest building and equip it with ...

Wireless self-powered
sensors to detect...



Usage



Environmental
Conditions



Motion



Door/ Window
Status

Wireless, self-powered sensors
and actuators to control...



Light



Air Quality

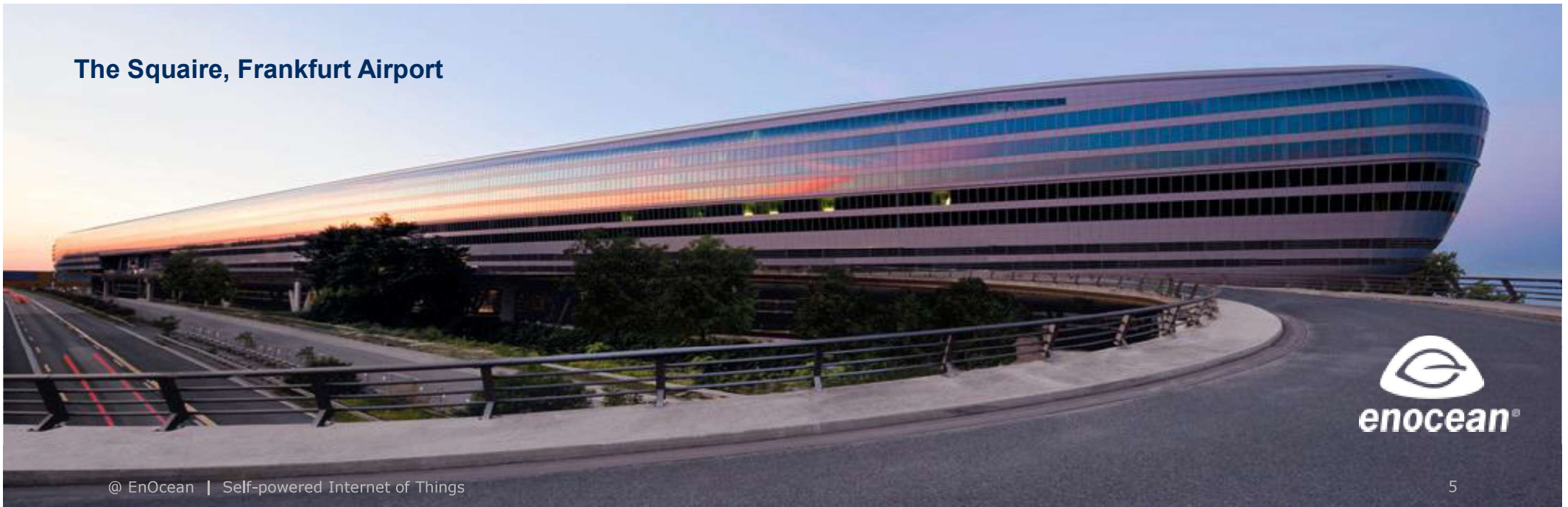


Humidity



Temperature

The Squaire, Frankfurt Airport

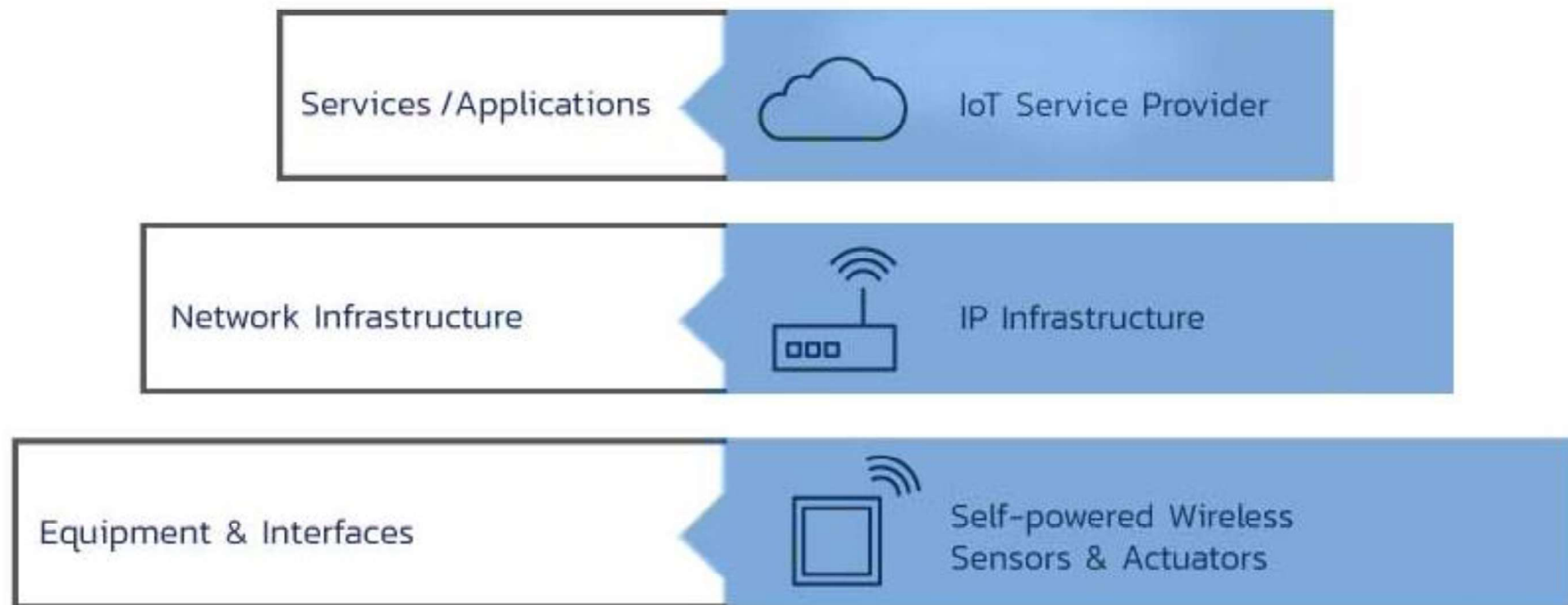


...and turn it into a self optimizing “cognitive building” with:

- Reduced energy consumption
- Increased user flexibility
- Improved work quality and convenience
- Increased safety
- Reduced system cost
- Increased RoI



The Promise to Self-Powered IoT



EnOcean combines core technologies into easy to use products

Energy Harvesting



Energy harvesting generates power from ambient energy: kinetic, solar and thermo.

Wireless



Sensor communication based on open radio standards : EnOcean, Zigbee and Bluetooth Low Energy.

Ultra Low Power



Ultra low power management secures batteryless 24/7 operation.

We connect wireless and self-powered sensors to IoT systems using open wireless standards



EnOcean Alliance – the self-powered wireless standard

→ 400 members

→ 1,500 interoperable products



→ Standardization of Energy Harvesting

→ Support of Existing **Eco Systems**



We sell EnOcean modules and Easyfit products



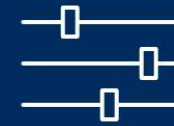
Energy
Converter



Wireless &
Self-powered
Switches



Wireless &
Self-powered
Sensors

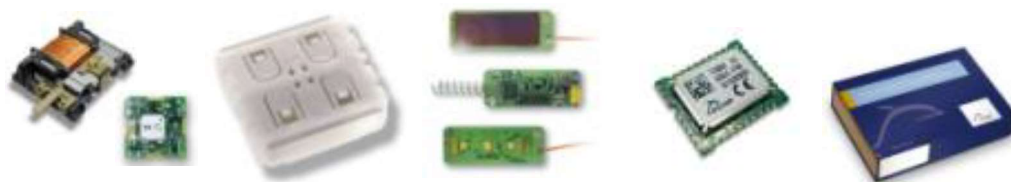


Controllers



Tools

 **EnOcean**



EASYFIT
by EnOcean



EnOcean's seal "Battery-free by EnOcean" for self-powered switches



The Partners to Fulfill

Our business scales with customers, partners and suppliers delivering highly innovative products & solutions

Customers & Partners in Building Automation



Customers & Partners in Lighting



Customers & Partners for IoT solutions



Customers & Partners for M2M



... and last but not least did you know that the EnOcean eco system...

→ has installed products around the world in more than **500,000** buildings over the past **15** years saving approximately **50,000,000** batteries?

→ has more than **3.5 Mio** “Battery-free by EnOcean” kinetic energy-harvesting products in use?

→ has over **1,500** commercial interoperable products based on the EnOcean radio standard?

→ will be an important driver for **Trillions** of IoT sensors that will be in operation by **2025**?

Source: TSensor Summit, Oct 2013